

ABSTRACT OF THE DISCLOSURE

Micromechanical devices are provided that are capable of movement due to a flexible portion. The micromechanical device can have a flexible portion formed of a nitride of preferably an element from groups 3A to 6A of the periodic table (preferably from the first two rows of these groups) and a late transition metal (preferably from groups 8B or 1B of the periodic table). The micromechanical devices can be any device, particularly MEMS sensors or actuators preferably having a flexible portion such as an accelerometer, DC relay or RF switch, optical cross connect or optical switch, or a micromirror part of an array for direct view and projection displays. The flexible portion is preferably formed by sputtering a target having a group 8B or 1B element and a group 3A to 6A element. The target can have other major constituents or impurities (e.g. additional group 3A to 6A element(s)). The target is reactively sputtered in a nitrogen ambient so as to result in a sputtered hinge. It is possible to form both stiff and/or flexible portions of the micromechanical device in this way.